

WHAT IS CLAIMED IS:

1. An administrative module for use in a digital switch, wherein the digital switch includes a plurality of blades coupled to a switching fabric, and wherein each blade outputs serial data streams with in-band control information in multiple stripes to said switching fabric, said administrative module comprising:

a level monitor that monitors the data received at a receiving blade;
and

a stripe synchronization error detector that detects a stripe synchronization error based on the amount of data monitored by said level monitor.

2. The administrative module of claim 1, wherein the data received at a receiving blade is sorted based on stripe and source information and stored in a set of data structures, and wherein:

said level monitor monitors the levels of data stored in each data structure receiving blade, and

said stripe synchronization error detector detects at least one of an overflow and underflow condition in the amount of data received on a respective stripe from a particular source.

3. The administrative module of claim 1, further comprising:

a flow controller that initiates a recovery routine to re-synchronize data across the stripes in response to detection of a stripe synchronization error.

4. The administrative module of claim 3, wherein said recovery routine includes throttling back the data flowing to one or more of said stripes.

5. The administrative module of claim 1, further comprising: a control character presence tracker that identifies the presence of a K2 character during the recovery routine.

6. The administrative module of claim 1, wherein said stripe synchronization error detector detects a stripe synchronization error in response to any one or more of the following error conditions: an incoming link error, a cross-point failure, and an outgoing link error.

7. A method for detecting stripe synchronization error in a network switch, comprising:

- (a) sorting data received at a receiving slot based on stripe and source information;
- (b) storing the sorted data in a set of data structures;
- (c) monitoring the levels of data stored in each data structure; and
- (d) detecting at least one of an overflow and underflow condition in the amount of data received on a respective stripe from a particular source.

8. The method of claim 7, wherein the source information identifies a slot that sent the data across a switching fabric of the network switch.

9. The method of claim 7, wherein the source information identifies a source packet processor that sent the data from a slot across a switching fabric of the network switch.

10. A method for maintaining synchronization of striped cell traffic, comprising the steps of:

- (a) sending a common character in striped cells in all lanes for a predetermined number of cycles;

- (b) evaluating the common control characters received at stripe receive synchronization queues; and
- (c) detecting when an in-synch condition is present that indicates the stripe receive synchronization queues have been cleared.

11. A method for managing out-of-synchronization traffic flow through a cross-point switch in a switching fabric, comprising:

- (a) monitoring the level of stripe receive synchronization queues;
- (b) determining whether an out-of-synchronization condition exists; and
- (c) initiating a re-synchronization routine when said out-of-synchronization condition exists.

12. The method of claim 11, further comprising, after said initiating step (c), the steps of:

- (d) sending a common character in striped cells in all lanes for a predetermined number of cycles;
- (e) evaluating the common control characters received at stripe receive synchronization queues; and
- (f) detecting when an in-synch condition is present that indicates the stripe receive synchronization queues have been cleared.

13. A redundant switching system, comprising:

two switching blades, each switching blade having a plurality of cross points corresponding to respective stripes of serial data streams; and

at least one blade coupled to each switching blade through a backplane connection, wherein said at least one blade includes a plurality of redundant fabric transceivers which can switch traffic between the cross points on the two switching blades.

14. A redundant fabric transceiver coupled to a bus interface adapter comprising:

one or more first ports that communicate similar data in a substantially simultaneous fashion, wherein each of said one or more first ports is coupled to at least one switching fabric module;

a multiplexer that selects communication data from said similar data for transmission, for transmission wherein said similar data can include more than one version of said communication data;

a downlink transceiver that receives, conditions, and transmits said communication data; and

one or more second ports that receives said communication data once transmitted from said multiplexer, wherein said one or more second ports forwards said communication data to a bus interface adapter.

15. The redundant fabric transceiver of claim 14, further comprising:

an uplink transceiver that receives, conditions, and transmits said communication data, wherein said one or more second ports receives said communication data from said bus interface adapter, wherein said one or more second ports forwards said communications data to said uplink transceiver, wherein said uplink transceiver conditions and forwards said communication data to said multiplexer, wherein said multiplexer generates one or more similar data for forwarding to said one or more first ports.

16. The redundant fabric transceiver of claim 15, further comprising:

one or more first queues for buffering data, wherein said one or more queues are coupled to said multiplexer.

17. The redundant fabric transceiver of claim 15, further comprising:

one or more second queues for buffering data, wherein said one or more second queues are coupled to at least one of said downlink transceiver and said uplink transceiver.

18. The redundant fabric transceiver of claim 15, further comprising:

a register module that includes condition information that indicates operations for at least one of said downlink transceiver and said uplink transceiver, wherein said condition information includes configuration and parameter settings for received and transmitted data.

19. The redundant fabric transceiver of claim 15, wherein said one or more first ports are serializer/deserializers.

20. The redundant fabric transceiver of claim 15, wherein said one or more second ports are serializer/deserializers.

21. The redundant fabric transceiver of claim 15, wherein said downlink transceiver includes a receiver, a random access memory module, and a transmitter.

22. The redundant fabric transceiver of claim 15, wherein said uplink transceiver includes a receiver, a random access memory module, and a transmitter.

23. The redundant fabric transceiver of claim 15, wherein said one or more first ports are able to be individually inactivated in the event of an error condition affecting said one or more first ports.

24. The redundant fabric transceiver of claim 15, wherein said one or more first ports are able to be switched to without loss of data.